

REMARKS/ARGUMENTS

Status of Claims

Claims 1-56 are pending in the application.

Claims 2, 11, 13, 15, 36, 53, 55 and 56 are hereby amended.

Applicants hereby request further examination and reconsideration of the presently claimed application.

Allowable Subject Matter

Applicants note with appreciation the allowance of claims 6, 7, and 56 and the indication that claims 24-31, 33, 36, 39-41, and 51 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections – 35 U.S.C. § 112

Applicants respectfully traverse the Final Office Action's rejections of claims 1-5 and 8-55 as being indefinite under a reading of the second paragraph of 35 U.S.C. § 112. The Final Office Action states, "claiming two distinct limitations in the alternative is considered indefinite." *See* Final Office Action at 2. This is not the law. "[T]he mere use of an alternative expression in [a] claim . . . does not render the claim vague and indefinite under 35 U.S.C. 112, second paragraph." *See Ex parte Head*, 214 USPQ 551, 553 (Bd. Pat. App. & Int. 1981). "The second paragraph of 35 U.S.C. 112 merely requires that an applicant set out and circumscribe a particular area with a reasonable degree of precision and particularity such that the metes and bounds of the claimed invention are reasonably set forth." *See id.* Applicants contend that "wherein the heat used to heat the energy storage device is a product of a non-electrically powered process or a byproduct of an electrically powered process" reasonably circumscribes, with a degree of precision and particularity, the metes and bounds of the Applicants' claimed invention so that "the artisan

reading the claim would not be confused as to what the claim, considered as a whole, would preclude others from doing.”¹ See *Ex parte Head*, 214 USPQ at 553.

The first expression “a product of a non-electrically powered process” clearly describes that the heat used to heat the energy storage device is the direct and primary result, i.e. the product, of a non-electrically powered process. The second expression, “a byproduct of an electrically powered process,” clearly describes that the heat used to heat the energy storage device is not the direct and primary result of an electrically powered process, but, rather is an unintentional side-effect of an electrically powered process, i.e. a byproduct. There is no question that the terms “product” and “byproduct” particularly point out and distinctly claim the subject matter which Applicants regard as their invention. Furthermore, indisputably, the terms “product” and “byproduct” have inherently different connotations, due in large part to the addition of the prefix “by” to the term “product” to distinguish the two terms. See MSN Encarta Dictionary, available at, http://encarta.msn.com/dictionary_/by.html (last visited December 22, 2006) (by- or bye-, prefix, Definition: 1. secondary, · byroad · byproduct). Because “product” and “byproduct” are certain, non-ambiguous, and independent terms, claims 1-5 and 8-55 should not be rejected as indefinite. See MPEP § 2173.05(h)(I).

Claim Rejections – 35 U.S.C. § 102

The Final Office Action again rejected claims 1-5, 8, 10, 11, 15, 17, 18, 34, 35, 37, 38, 44-47 and 52-55 under 35 U.S.C. § 102(b) as being anticipated by *Scherbatskoy* (U.S. 4,416,000). As explained by the Court of Appeals for the Federal Circuit: “[a] claim is anticipated only if each and

¹ Applicants further contend that “wherein the heat used to heat the energy storage device is a product of a non-electrically powered process or a byproduct of an electrically powered process” are proper alternative expressions because “they present no uncertainty or ambiguity with respect to the scope or clarity of the claims,” see MPEP § 2173.05(h)(I), and “[a]lternative expressions using ‘or’ are acceptable.” See MPEP § 2173.05(h)(II).

every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Previously presented claim 1 reads:

1. A method of preparing an energy storage device for powering a downhole tool, comprising: heating an energy storage device to an effective temperature to improve operability of the energy storage device, wherein the heat used to heat the energy storage device is a product of a non-electrically powered process or a byproduct of an electrically powered process.

Claim 46 is subject to similar limitations. Support for the claim language can be found in the specification. *See, e.g.*, Application paragraph [0020] (“[A]n embodiment is depicted in which reactants being fed to an acid fuel cell 22 are pre-heated by heat generated by the fuel cell itself.”); paragraph [0024] (“[O]ne or both feed lines 14 and 16 are heated by waste heat generated by electrical load 34, which may power a downhole tool such as a transmitter.”); paragraph [0032] (“A magnetic field generator 116 may be placed within casing 114 that includes a ferromagnetic core 118 and electromagnetic coils 120. A current may be passed down from the surface of the earth via electrical line 122 and through electromagnetic coils 120, thereby generating a magnetic field for heating a battery 126 positioned outside of casing 114.”); and paragraph [0033] (“Another heat source is waste heat from a refrigeration system used to cool downhole components such as the electronics of a downhole tool.”). Previously presented claims 15 and 53 also recite “non-electrically powered” heater which is consistent with the scope of previously presented claims 1 and 46. Applicants reassert that *Scherbatskoy* does not teach the limitations contained in the previously presented language of claims 1, 15, 46, and 53.

The Final Office Action states that “Applicant’s arguments filed 12 September 2006 have been fully considered but they are not persuasive [and] [t]he examiner contends ‘the byproduct of

an electrical process' does not define over Scherbatskoy." *See* Final Office Action at 8. The bases for the Final Office Action's determination are inexplicably erroneous.

First, the Final Office Action's statement "the energy storage device [is] heated using heat generated by the discharge of the energy storage device" *see* Final Office Action at 3, while facially correct, is not applicable to the claims of the instant Application. This is because, although *Scherbatskoy* teaches that its battery's temperature can be maintained by way of "applying voltage from the battery to the associated heating means to heat the battery while in the borehole to maintain the temperature of the battery to an appropriate operating temperature," *see Scherbatskoy* at col. 4, line 67 – col. 5, line 2. (the "heating means" are defined as the "heating elements 156" which are electrically powered components used to melt the electrolyte), nowhere in *Scherbatskoy* is it taught or suggested that the byproduct heat from the discharge of the battery is sufficient to maintain the battery in an operational temperature range.

Second, the Final Office Action suggests:

Scherbatskoy has a thermostatic switch 159 which activates heater 156 when "additional heat . . . is required." This "additional heat" *implies* there is a working temperature within the operating range. When the battery supplies power to the load, the battery will generate heat and if additional heat is needed, switch 159 closes. *Thus, the byproduct heat resulting from powering the DC load anticipates claims 1 and 46.*

See Final Office Action at 8 (emphasis added).

Even if the Final Office Action's hypothetical was accurate, "the byproduct heat resulting from powering the DC load," *see* Final Office Action at 8, would be the byproduct of a non-electrically powered process, i.e. the battery's conversion of chemical energy into electricity (the product of course is the electricity produced), which is not an element of any of the rejected claims

of the instant Application. The instant Application's claims concern the "a byproduct of an electrically powered process" or "product of a non-electrically powered process."

Further illustrative of *Scherbatskoy*'s inapplicability to the instant Application is consideration of the omitted portion of the *Scherbatskoy* quote above, "when 'additional heat . . . is required.'" *See supra*. The full quote reads, "when additional heat *to the battery* 155 is required." *See Scherbatskoy* at col. 3, lines 60-61 (emphasis added). Unlike the Final Office Action's intimation that heat *from* the battery, i.e. "the byproduct heat resulting from powering the DC load," would suffice to maintain the battery's operational temperature, the "to the battery" language teaches that when the temperature of the wellbore drops below the battery's operating range additional heat must be provided "to the battery" in order to maintain the battery in an operational condition. *Cf. Scherbatskoy* at col. 2, lines 49-55 ("By use of the present invention, the temperature of the batteries employed in the power source can be maintained at all times in a temperature range so as to provide a readily available electrical energy source both at the earth's surface, at intermediate depths, and at lower depths within the borehole."). Logic dictates that, if as suggested by the Final Office Action, "heat generated by the discharge of the energy storage device" were enough to maintain the battery in an operational state, there would be no need for the thermostatic switch because once the battery began discharging (at the surface per *Scherbatskoy*, col. 3, lines 40-41, 50-54), there would never again be a need to apply voltage to the heating elements. However, *Scherbatskoy* teaches that thermostatic switch is responsive to changes in ambient temperature of the wellbore and will open when the wellbore ambient temperature is in the operating range of the battery and close when the wellbore ambient temperature drops below the operating range of the battery. *See Scherbatskoy* at col. 4, line 51 – col. 5, line 17. Clearly, the thermostatic switch of *Scherbatskoy* is utilized to open or close in response to changes the ambient

temperature of the wellbore -- which is the determinant of whether the battery's operational temperature range is met without applying "additional heat to the battery" by way of electrically-powering the heating elements of *Scherbatskoy*'s energy storage device. *See supra*.

Based on the foregoing, *Scherbatskoy* does not teach the use of heat generated as a product of a non-electrically powered process or as a byproduct of electrically powered process as a method of heating energy storage devices. Specifically, *Scherbatskoy*'s teachings are limited to the use of electrically powered heat sources (e.g., heat sources that convert electric current directly to heat energy) as a means of heating energy storage devices to improve their operability. Thus, the pending claims contain an element, or elements, not present in *Scherbatskoy*. Accordingly, the pending claims should be allowed as they are not anticipated by *Scherbatskoy*.

Claim Rejections – 35 U.S.C. § 103

The Final Office Action rejected claims 9, 14, 16, 19, 20, 42, 43, and 48 under 35 U.S.C. § 103(a) as being unpatentable over *Scherbatskoy* in view of *Blake* (U.S. 4,314,008). The Final Office Action rejected claims 12, 49, and 50 under 35 U.S.C. § 103(a) as being unpatentable over *Scherbatskoy* in view of *Ashtiani* (U.S. 6,259,229). The Final Office Action rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over *Scherbatskoy* in view of *Ashtiani* (U.S. 6,259,229) and in further view of *Reiss* (U.S. 4,692,363). The Final Office Action rejected claims 21-23 and 32 under 35 U.S.C. § 103(a) as being unpatentable over *Scherbatskoy* in view of *VanBerg, Jr.* (U.S. 5,202,194). Thus, claims 9, 12, 13, 14, 16, 19-23, 32, 42, 43, 48, 49, and 50 stand or fall on the application of *Scherbatskoy* to the claims.

The requirements for establishing a *prima facie* case of obviousness are well established:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must

be a reasonable expectation of success. *Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.* The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. MPEP § 2142 citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added).

As explained in reference to the § 102(b) rejections above, *Scherbatskoy* fails to teach or suggest the limitations contained in claims 1 and 46. In addition, all dependent claims incorporate the limitations of the claims they depend on. Because claims 9, 12, 13, 14, 16, 19-23, 32, 42, 43, 48, 49, and 50 depend on and; therefore, incorporate the limitations of amended claims 1 and 46, and *Scherbatskoy* fails to teach the limitations of amended claims 1 and 46, *Scherbatskoy* also fails to teach or suggest the limitations contained in claims 9, 12, 13, 14, 16, 19-23, 32, 42, 43, 48, 49, and 50. The Final Office Action does not cite the remaining prior art references to teach the limitations that are absent from *Scherbatskoy*. Thus, the Final Office Action does not establish a *prima facie* case of obviousness as to claims 9, 12, 13, 14, 16, 19-23, 32, 42, 43, 48, 49, and 50, which are allowable over the cited prior art.

CONCLUSION

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections and objections are respectfully requested by Applicants. No new matter is introduced by way of the amendment. It is believed that each ground of rejection raised in the Final Office Action dated November 2, 2006 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,
CONLEY ROSE, P.C.

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